

DISCUSSION OF THE AMENDMENT

Due to the length of the specification herein, Applicants will cite to the paragraph number of the published patent application (PG Pub) of the present application, i.e., US 2006/0024569, when discussing the application description, both in this section and in the Remarks section, *infra*, rather than to page and line of the specification as filed.

Claim 1 has been amended to require that the solvent comprise a mixture of at least one alcohol and at least one hydrocarbon, as supported in the specification at paragraph [0051], combined with various examples in Table 3 at paragraph [0095].

Claim 26 has been amended by, in effect, combining the solvents recited therein and the solvent recited in Claim 27. Claim 27 has been canceled.

No new matter is believed to have been added by the above amendment. Claims 1-12, and 26 are now active in the application; Claims 13-20 and 22-25 stand withdrawn from consideration.

REMARKS

The rejection of Claims 1-12, 26 and 27 under 35 U.S.C. §103(a) as unpatentable over U.S. 6,309,545 (Penth et al) in view of U.S. 6,200,706 (Ashida et al), is respectfully traversed.

In response to Applicants' arguments in the prior response that the comparative data of record shows, in effect, unexpectedly superior results when the coating is prepared from a sol or suspension comprising a solvent which comprises at least one alcohol or at least one hydrocarbon, or mixtures thereof, the Examiner finds that the showing is not commensurate in scope with the claimed invention, pointing out the differences in components between Comparative Examples 1 and 2, on the one hand, and Inventive Example 3, on the other hand. One basis for the Examiner's finding is that Inventive Example 3 employs isopropanol and cyclohexane. The above-amended claims now require the presence of both an alcohol, such as isopropanol, and a hydrocarbon, such as cyclohexane, which should moot this basis. In addition, Figs. 3 to 5 herein, and Table 2, demonstrate the influence of solvent on various properties of the resulting ceramic coating, the only difference being the solvent. Thus, Figs. 3 to 5 exemplify the solvents cyclohexane, isopropanol, and an ethanol-water mixture, respectively. The differences between Figs. 3 and 4, on the one hand, and Fig. 5, on the other hand, are manifest. As described in the specification at paragraph [0051], very apolar solvents such as cyclohexane give the largest porosity and the largest average pore radii, while polar solvents, i.e., such as a mixture of water and ethanol, gives very small pore radii and also lower porosities. The production of ceramic layers using polar solvents and especially of cyclohexane or cyclohexane-containing mixtures is therefore particularly preferable. Clearly, the data in said Figs. 3 to 5 and Table 2 should be sufficient to distinguish over Penth et al.

It is thus worth repeating how the present invention generally distinguishes over Penth et al. Thus, Penth et al., being from the same patent family as WO99/15262, is described in the specification herein, which describes at paragraph [0050] that the operation described in Penth et al. is not fully applicable to polymeric nonwoven materials in the form of the sols described therein, since the very watery sol systems described therein frequently do not provide complete, in-depth wetting of the customarily hydrophobic polymeric nonwovens, since most polymeric nonwovens are only badly wetted by the very watery sol systems, if at all. It has been determined that even the minutest unwetted areas in the nonwoven material can lead to membranes or separators being obtained that have defects and hence are not usable. As described in the specification at paragraph [0051], it has now been found that, surprisingly, a sol system or suspension whose wetting behavior has been adapted to the polymers will completely penetrate the nonwoven materials and so provide defect free coatings when non-aqueous solvents are used.

In addition, Penth et al. is significantly broader than the present invention. For example, Penth et al. discloses that their carrier can contain at least one material from the following: carbon, metals, alloys, glass, ceramic materials, minerals, plastics, amorphous substances, natural products, composites or at least one combination of these materials (column 3, lines 42-46). Penth et al. discloses further that it is “absolutely preferable” that the composite contains at least one carrier that has at least woven, glued, felted or ceramically bound fibers or at least sintered or glued formed bodies, sphere or particles (column 3, lines 54-57). Penth et al. discloses further that it can be advantageous if the carrier contains fibers from at least one of the following materials: carbon, metals, alloys, glass, ceramic materials, minerals, plastics, amorphous substances, natural products, composites or fibers consisting of at least one combination of these materials, such as asbestos, glass fibers, carbon fibers, metal wires, steel wires, rock wool fibers, polyamide fibers, coconut fibers, coated fibers;

preferably, carriers are used that at least contain woven fibers made of metal or alloys (paragraph bridging columns 3 and 4). In other words, one of ordinary skill in the art would not appreciate from Penth et al the particular problems which arise from the use of a substrate material made of electrically nonconductive polymeric fibers.

For all the above reasons, it is respectfully requested that the rejection be withdrawn.

The provisional rejection of Claims 1-11, 26 and 27 on the ground of nonstatutory obviousness-type double patenting over Claims 1-12 and 25 of copending application no. 10/524,143 ('143 application), in view of Penth et al, is respectfully traversed. Even if one of ordinary skill in the art were to combine Penth et al with the claims of the '143 application, the presently-claimed invention would not have been obtained, for the same reasons as discussed above with regard to the prior art rejection. In other words, one of ordinary skill in the art would not know that aqueous sols, as disclosed by Penth et al, are insufficient to provide the necessary wetting behavior or complete penetration of nonwoven materials and so to provide defect-free coatings. Accordingly, it is respectfully requested that this rejection be withdrawn.

The provisional rejection of Claims 1-11, 26 and 27 on the ground of nonstatutory obviousness-type double patenting over Claims 1, 3-10, 32-38, 40 and 46-52 of copending application no. 10/501,713 ('713 application), in view of Penth et al and Ashida et al, is respectfully traversed.

Even if one of ordinary skill in the art were to combine Penth et al and Ashida et al with the claims of the '713 application, the presently-claimed invention would not have been obtained, for the same reasons as discussed above with regard to the prior art rejection, and the double patenting rejection over the '143 application in view of Penth et al and Ashida et al. Accordingly, it is respectfully requested that this rejection be withdrawn.

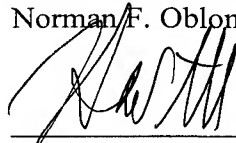
The provisional rejection of Claims 1-11, 26 and 27 on the ground of nonstatutory obviousness-type double patenting over Claims 1-12 and 31-36 of copending application no. 10/504,144 ('144 application), in view of Penth et al and Ashida et al, is respectfully traversed.

Even if one of ordinary skill in the art were to combine Penth et al and Ashida et al with the claims of the '144 application, the presently-claimed invention would not have been obtained, for the same reasons as discussed above with regard to the prior art rejection, and the double patenting rejection over the '143 application in view of Penth et al and Ashida et al. Accordingly, it is respectfully requested that this rejection be withdrawn.

Applicants respectfully submit that all of the presently-active claims in this application are now in immediate condition for allowance. The Examiner is respectfully requested to rejoin non-elected process claims of even scope, and in the absence of further grounds of rejection, pass this application to issue with all active and rejoined claims.

Respectfully submitted,

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